

TABLE OF CONTENTS

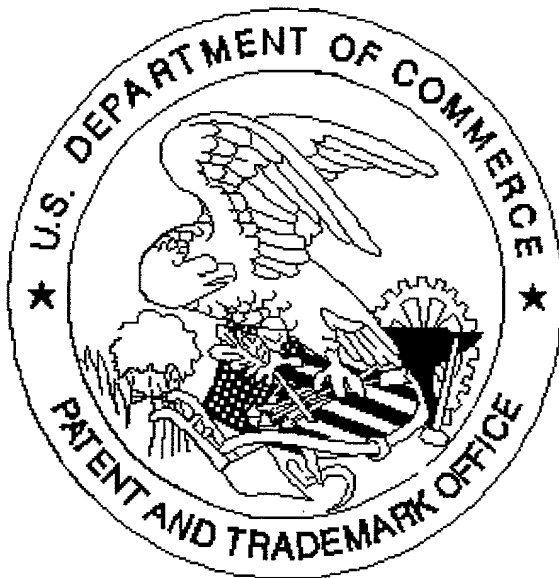
(PROVIDED FOR EXAMINATION REFERENCE PURPOSES)

PATENT APPLICATION INVENTORS.....	2
SPECIFICATION	3
TITLE OF INVENTION	3
CROSS REFERENCE TO RELATED APPLICATIONS	3
Provisional Patent Applications	3
PARTIAL WAIVER OF COPYRIGHT	3
STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT	4
REFERENCE TO A MICROFICHE APPENDIX.....	4
FIELD OF THE INVENTION	4
Overview	4
Problem Solution Field	5
BACKGROUND AND DESCRIPTION OF THE PRIOR ART	6
Overview	6
Present Invention Contrasted with Prior Art Solutions	7
Exemplary Prior Art Solutions.....	7
Handoff Aware Inter-Domain Infrastructure [HAWAII]	8
Overview	8
Terminology used in HAWAII	12
Home Domain.....	12
Foreign Domain	12
Domain Root Router	12
Update Messages.....	12
Principles.....	12
Sequence of Operations – Power Up	13
Operation Sequence – Intra-domain Movement (Non-Forwarding).....	14
Sequence of Operations – Intra-Domain Handoff.....	14
Cellular IP [CIP].....	15
Overview	15
Terminology.....	16
Cellular IP Node	16
Gateway Controller	16
Gateway Packet Filter.....	16
Cellular IP Gateway	16
Control Packet.....	17
Paging Cache	17
HAWAII and CIP Deficiencies	17
Location Management and Routing.....	17
Cellular IP Functions	18
Location Management.....	18
Routing.....	19
Handoff.....	19
Wide-Area Mobility	20
Singapore University Proposal	20
Terminology.....	21

Domain Foreign Agent (DFA)	21
Dynamic Virtual Macro-cells (DVMs).....	21
Principles.....	21
Hierarchical Micro Mobility	22
Terminology.....	22
Access Mobility Management Protocol	22
Micro-mobility Management Protocol.....	22
Macro-mobility Management Protocol.....	22
Principles.....	23
Sequence of Operations: Entering a New Domain (Inter-domain movement)..	23
Sequence of Operations: Intra-domain movement	24
Data Flow	24
Multicasting Based Architecture for Internet Host Mobility	25
Terminology.....	25
Location Server (Distributed Directory)	25
Base Station	26
Principles.....	26
DEFICIENCIES IN THE PRIOR ART	27
OBJECTIVES OF THE INVENTION	29
BRIEF SUMMARY OF THE INVENTION	30
Multicast Micro-Mobility (MMM) Protocol	30
Protocol Extensions.....	33
Message Extensions	34
Messaging Principles	35
Visiting a Foreign Domain	36
Care-of-Address.....	39
Traffic Flow	40
Moving Within a Foreign Domain	41
Make-Before-Break	42
Exemplary Advantages.....	43
BRIEF DESCRIPTION OF THE DRAWINGS	44
DESCRIPTION OF THE PRESENTLY PREFERRED EXEMPLARY EMBODIMENTS.....	46
Definitions	47
System Blocks / Procedural Steps Not Limitive	47
Personal Computer Not Limitive	47
Internet/Intranet Not Limitive	48
Application Programming Interface (API) Not Limitive	49
Operating System Not Limitive	49
Data Structures Not Limitive	50
Communication Media Not Limitive	50
Acronyms	50
Wireless Domain (WD).....	51
Main Access Router (MAR)	51
Base Station Router (BSR).....	51
BSR Coverage Area	51
Serving BSR.....	51
Base Station (BS)	52
BS Coverage Area.....	52
BSR Active Cache	52
BSR Probable Cache.....	52

Cell	52
Overview	52
New Mobile IP Extensions	57
Mobile Node Advertisement (0900)	57
BSR Extension (1000)	58
Multicast Address Extension (1100)	58
Neighbor Update Extension (1200)	59
Protocol Overview (1300 - 1600)	60
Network Element Components (1300)	60
Protocol Extension Messages (1500)	62
Generalized Mobility Scenarios (1600)	63
Entering the Foreign Domain (1700 - 3200)	64
Care-of Address (COA) (2500)	69
Traffic Flow	70
Foreign Agent Care-Of Address (2600, 2700)	70
Co-Located Care-Of Address (2800)	71
Correspondent Within the Wireless Domain (2900)	71
Moving Within the Foreign Domain (3000)	72
Make-Before-Break Option (3100)	73
Refreshing the Registration (3200)	74
Moving Within the Home Domain	74
Virtual Home Network (3300, 3400)	74
Traffic Flow (3500)	76
Change in Existing Protocol Behavior	77
Mobile Node Considerations	77
Base Station Considerations	78
Base Station Router Considerations	79
Main Access Router Considerations	83
Exemplary System Enhancements	86
Load Balancing	86
Grouping BSR in Cluster	87
PREFERRED SYSTEM CONTEXT OF THE PRESENT INVENTION	88
Overview (3700)	88
SGM/XCAST	89
Implementation Using XCAST	92
Creation of XCAST Session	95
Make-Before-Break	97
COMPUTER SOFTWARE MEDIA (3800)	99
SIGNAL ENCODING (3900, 4000)	100
CONCLUSION	101
CLAIMS	104
ABSTRACT OF THE DISCLOSURE	116

United States Patent & Trademark Office
Office of Initial Patent Examination -- Scanning Division



Application deficiencies found during scanning:

☐ Page(s) _____ of _____ were not present
for scanning. (Document title)

☐ Page(s) _____ of _____ were not
present
for scanning. (Document title)

☐ **Scanned copy is best available.**

* Page 1 of Specification is Certificate
of Express Mail